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SOUTHEASTERN COOPERATIVE WILDLIFE DISEASE STUDY

PARASITOLOGY
COLLEGE OF VETERINARY MEDICINE
THE UNIVERSITY OF GEORGIA
ATHENS, GEORGIA 30602

UNITED STATES
FISH AND WILDLIFE
SERVICE
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January 6, 1993

Mr. Don H. Orr
U.S. Fish and Wildlife Service
Memphis State University - South Campus
Memphis, Tennessee 38152

Dear Don:

Enclosed are our reports on the deer herd health checks conducted on Big Lake National Wildlife Refuge, Mississippi County, Arkansas and Chickasaw National Wildlife Refuge, Lauderdale County, Tennessee on September 21-22, 1992. The health checks involved examination of five adult deer at each Refuge. The data for each Refuge are arranged into a series of tables (parasitologic, serologic, and pathologic) and are accompanied by interpretive comments.

As is evident from our comments, the herds on both Big Lake NWR and Chickasaw NWR appear to be reasonably healthy, and we did didnot encounter any overtly diseased animals on either area. The APC values indicate that both herds have a high probability of being near nutritional carrying capacity and do not suggest high potentials for declines in herd health at current herd densities.

We trust that this information will be of value in management of this deer herd. Detailed information on the parasites and diseases covered in these reports can be obtained from the text Diseases and Parasites of White-tailed Deer. In particular, we would refer you to pages 413-423 for an explanation of the relationships between deer density, nutrition, and disease. The attached flier also has an elementary explanation of the basics of deer herd health. If you have any questions about these reports or if we can be of assistance on other wildlife health matters, please do not hesitate to contact us.

Sincerely,

William R. Davidson, PhD
Associate Professor

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Distribution:

Mr. James W. Pulliam, Jr.
Mr. Harold W. Benson
Mr. E. Frank Bowers
Mr. Dennis Widner
Mr. Luke F. Eggering
Mr. Marvin L. Nichols
Mr. Steve N. Wilson
Mr. Don Akers
Mr. Michael Cartwright
Mr. Gary T. Myers
Mr. Larry C. Marcum
Mr. Greg Wathen
Mr. David Waller
Mr. Joe L. Herring

Table 1. Arthropod, helminth, and protozoan parasites of five white-tailed deer (Odocoil
Refuge, Mississippi County, Arkansas, on September 22, 1992.

Animal Number	1	2	3	4	5	Anim
Age (years)	1.5	3.5	4.5	3.5	1.5	Lice
Sex	M	F	F	F	M	Lous
Weight (pounds)	118	96	119	131	114	Tick
Physical Condition	Good	Fair	Fair	Good	Fair	Chig
Kidney Fat Index	23.3	16.0	12.5	35.2	22.4	Ear
Packed Cell Volume	44	24	40	36	49	Nasa
Hemoglobin	17.0	10.6	10.6	14.2	17.0	

		Number of Parasites Pe			
Location in Host	HELMINTHS	1	2	3	
Brain					
Circulatory					
Lungs	Dictyocaulus viviparus	3	1	-	
	Protostrongylid larvae	-	-	-	
Abdominal Cavity					
Liver					
Esophagus					
Rumen					
Abomasum	Mazamastrongylus odocoilei	784	64	420	1,1
APC = (1,220)	Ostertagia dikmansi	784	386	300	1
	Ostertagia mossi	392	450	120	
	PROTOZOANS				
Blood	None				

Table 2. Results of serologic tests for selected diseases in five white-tailed deer from Big Lake National Wildlife Refuge, Mississippi County, Arkansas, on September 22, 1992.

Disease	Deer Number 1	2	3	4	5
Leptospirosis					
(serotype *bratislava*)	Neg	Neg	Sus	Neg	Neg
(serotype *pomona*)	Neg	Neg	Neg	Neg	Neg
(serotype *hardjo*)	Neg	Neg	Neg	Neg	Neg
(serotype *grippotyphosa*)	Neg	Neg	Neg	Neg	Neg
(serotype *icterohemorrhagiae*)	Neg	Neg	Neg	Neg	Neg
(serotype *canicola*)	Neg	Neg	Neg	Neg	Neg
Brucellosis	Neg	Neg	Neg	Neg	Neg
Infectious bovine rhinotracheitis (IBR)	Neg	Neg	Neg	Neg	Neg
Bovine virus diarrhea (BVD)	Neg	Neg	Neg	Neg	Neg
Parainfluenza$_3$ (PI_3)	Neg	Neg	Neg	Neg	Neg
Epizootic hemorrhagic disease (EHD)	Neg	Neg	Neg	Neg	Neg
Bluetongue (BT)	Neg	Neg	Neg	Neg	Neg
Lyme Disease	Neg	Neg	Neg	Neg	Neg

Table 3. Lesions and pathologic conditions in five white-tailed deer collected from Big Lake National Wildlife Refuge, Mississippi County, Arkansas, on September 22, 1992.

Lesion/Condition	Deer Number 1	2	3	4	5
Bronchitis/peribronchitis	-	1	1	2	-
Fibrinous pleuritis	1	2	1	-	-
Focal Pneumonia	-	1	-	-	-
Ovarian tumor (teratoma)	-	1	-	-	-

*Key: - = lesion or condition not present; 1 = minor tissue damage or mild pathologic change; 2 = moderate tissue damage or moderate pathologic change; 3 = extensive tissue damage or marked pathologic change.

INTERPRETIVE COMMENTS: White-tailed deer, Big Lake National Wildlife Refuge, Mississippi County, Arkansas, on September 22, 1992.

Large lungworms (Dictyocaulus viviparus) present at low levels in three animals. Protostrongylid larvae, probably from muscleworms (Parelaphostrongylus andersoni), present in one animal. Mild to moderate lung lesions (bronchitis, peribronchitis, pleuritis, focal pneumonia) often associated with lungworms and protostrongylid larvae present in four deer. Abomasal parasites (Mazamastrongylus odocoilei, Ostertagia dikmansi, O. mossi, Trichostrongylus askivali) at a moderate level (APC = 1,220) indicating that the herd has a high probability of being near nutritional carrying capacity. Other helminth and blood protozoan parasites were noticably absent. Arthropod parasites at levels well below those typical of most southeastern deer herds.

Body weights, physical condition ratings, kidney fat indices, and hematologic values not remarkable. In addition to lesions attributable to parasitism (noted above), pathologic studies disclosed moderately severe pleuritis in one deer that did not appear to be related to parasitism and a benign ovarian tumor (teratoma) in one deer. Serologic tests for antibodies to selected infectious diseases were uniformly negative except for a suspicious titer to the bratislava serovar of Leptospira interrogans. Antibodies to leptospiral organisms are detected occassionally among deer indicating exposure, but these agents have been associated with significant disease among wild deer populations.

An overview is as follows: (1) based on APC data the herd is near nutritional carrying capacity; (2) the levels of important pathogenic parasites are not at levels sufficient to cause mortality; (3) there has not been any recent activity by important infectious diseases; (4) other parasites and pathologic conditions do not appear to be placing significant stress upon the herd; and (5) the overall health status of the herd presently does not indicate a significant risk of disease-related mortality. Based on these findings, the herd can be maintained near its present level without undue risk of a decline in herd health.